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find on the wild *Vitis cordifolia* and on the tame Clinton grape-vine, or the gall *caryævenæ* of Fitch, which I find exclusively on the leaves of the Shellbark Hickory (*Carya alba*), and the third—an undescribed gall, the size of a cabbage seed, on the leaves of the Pig-nut Hickory (*Carya glabra*) may easily satisfy himself that the mother-louse inhabiting them does not belong to the *Aphis* but to the *Coccus* Family," &c., &c., *without telling us how to become satisfied that a plainly two-clawed tarsus belongs to the Coccus family*, is quite incomprehensible, and certainly utterly at variance with their true anatomical characters. My paper discusses two of these *supposed bark-lice*, and I believe that the third is of the same character. Dr. Fitch's "rashness" is here fairly paralleled by the accuser himself, in the same paper, by "fixing the *family* to which a particular larva belongs," as I have abundantly demonstrated. H. S.

Feb. 5th.

MR. VAUX, Vice-President, in the Chair.

Twenty seven members present.

Feb. 12th.

The President, DR. HAYS, in the Chair.

Thirty members present.

The death of R. Kennicott, member, was announced.

Feb. 19th.

The President, DR. HAYS, in the Chair.

Forty-four members present.

The following papers were presented for publication :

"A list of introduced plants, growing in waste ground below the Philadelphia Navy Yard, &c." By Aubrey H. Smith.

"On the Habits of the Cutting Ant of Texas." By G. Lincecum.

The following deaths were announced :

William Norris, a member, on the 5th of January ; Brackenridge Clemens, M. D., of Easton, Pa., a correspondent ; Prof. Alexander Dallas Bache, a member, at Newport, R. I., on the 17th inst.

Dr. H. Allen directed the attention of the members to some features of interest in the conformation of the mammalian skull, based upon examinations of specimens in the Academy's collection.

Having noticed in the skull of a Kronian negro, in the Wistar and Horner Museum of the University of Pennsylvania, the absence of union between the greater wing of the sphenoid bone (alisphenoid) and anterior inferior angle of the parietal bone, and in its stead a union at that point between the temporal and frontal bones, he was desirous of ascertaining to what extent the variation would be found present in a series of crania. With this object examinations of the human skulls, eleven hundred in number, were made, when the variety was found present in twenty three. With these it was thought to be the result of deficient developement of the great wing of the sphenoid bone, an interspace being left which was occupied by a process of the temporal sent forwards and upwards to articulate with the frontal bone.

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This was rendered probable from the occasional occurrence of Wormian bones near the site of union. In five specimens out of the twenty-three Wormian bones were found placed between the squamo-parietal and squamo-frontal sutures, but more often in the former locality, when they were often associated with similar bones situated at the temporo-occipital region. The extent of the suture was subject to much variation; in some specimens it was an inch long and well marked, in others it was reduced to a mere point. In three specimens it was found on one side, the spheno-parietal being present on the other. In yet another the temporo-frontal was seen on one side and the spheno-parietal with Wormian bones on the other.

The whole number of specimens was distributed among the varieties of men as follows:

Anglo-Saxon, Pelasgic, Swede, Chinese, Hindu, Bengalese, Mandan, Seminole Indian, Blackfoot Indian, Iroquois, and Esquimaux, each one. The remaining twelve were negro.

This observation led to the examination of the skulls of the mammalia, the result being as follows:

<i>Spheno-parietal suture.</i>	<i>Temporo-frontal suture.</i>
Simia morio,	Troglodytes niger,
Simia satyrus, ex,	Hylobates,
Semnopithecus,	Cercopithecus, ex,
CATARRHINI,	PLATYRRHINI,
LEMURIDÆ,	Bison,
MARSUPIALIA,	Bos.
CARNIVORA,	Tragus,
CETACEA,	Tapirus,
SIRENIA,	Rhinoceros,
RUMINANTIA, ex.	Sus,
Chæropsis,	Equus,
Hyrax,	RODENTIA,
Dicotyles.	EDENTATA,
Troglodytes gorilla,	Hypsiprymnus.

In the anthropoid apes it was found that the temporo-frontal suture was constant in the skull of all the species excepting *S. morio* and one specimen of *S. satyrus*. Prof. Owen* mentions the spheno-parietal articulation in *S. satyrus*, and considers it a distinctive character of *Simia*; but in the skull of a young individual examined, the suture was indubitably temporo frontal. Out of seventeen specimens of *Cercopithecus* in the collection seven had the spheno-parietal articulation. In two of these it was spheno-parietal on one side, temporo-frontal on the other.

In the Ruminantia the alisphenoid was very slightly developed, the union being effected by the external angular process of the parietal growing downwards in a long falciform extension. This was seen to be a conspicuous feature in the skulls of this order. The variation noticed in *Bison*, *Bos* and *Tragus*, had its origin in the first two genera in the unusual development of the frontal bone backwards and outwards, reaching the temporal bone by cutting off, as it were, the descending process of the parietal. In the last, one specimen only was examined; the spheno-parietal union was complete on one side, while the temporo-frontal was but faintly determined on the other. It was thought probable that the skulls of young individuals of these genera would show upon examination the same plan of construction in this particular as others of the order.

The suture was seen to be invariable in *Carnivora*, *Cetacea*, *Sirenia*, *Edentata* and *Rodentia*; but inconstant among the members of *Marsupialia* and the Cuvierian order *Pachydermata*. Among the marked contrasts here observed were those between *Sus* and *Dicotyles*, *Hyrax* and *Rhinoceros*.

* Trans. Zool. Soc., vol. i., 1835, 368.

From the early obliteration of all cranial sutures in Cheiroptera and Insectivora—many young individuals of the former order were examined—nothing definite was ascertained concerning them. It is reasonable to suppose that they resemble the Carnivora.

Dr. Allen further spoke of a distinguishing feature between the skulls of the new and old world monkeys. In the former there is no bony external meatus; in the latter there is a well defined osseous tube as in man. He also invited attention to an interesting feature in the skull of a young Chimpanzee, in which it was found that the lachrymal and ethmoid bones were separated from one another by an ascending process of the orbital plate of the superior maxilla, which articulated with the internal angular process of the frontal bone. The peculiarity had not been seen in any ape, though a human skull in the collection (Esquimaux) exhibited it.

It was thought that the subject of sutures was of interest from an anatomical stand-point and might, after more extended comparison, prove of value in classification.

A letter was read from Dr. Charles M. Wetherill as follows :

Bethlehem, Pa., Feb. 16th, 1867.

WM. S. VAUX, Esq. :

Dear Sir,—Will you do me the favor to communicate to the Academy the following results, which I have reached in an investigation (not yet completed) upon the Itacolumite.

The so-called flexible character of this sandstone is universally attributed to the mica which it contains. I have succeeded, beyond a doubt, in establishing the fact that the said motion is due to innumerable ball and socket joints. This wonderful molecular grouping warrants, I think, the suggestion of "*articulites*" as a generic name for this class of sandstones. I succeeded in first observing the play of these joints upon their sections under the microscope, taken in three planes relative to the plane of stratification. It is, however, unnecessary to incur the labor of preparing such sections; the motion may be perceived with any fragment by examination with the microscope, moving the loose particles in the joints with the needle point, or removing the said particles, thus dissecting the specimens.

The joints are not similar to those observed in columns of basalt. The fragments of quartz are very small and very sharp; twenty, thirty or more of these sand particles are cemented to each other to form irregular compound molecules. The protuberances of these are engaged in the cavities of neighboring groups, and so irregular and abundant is the jointing, that a slight motion is permitted in any direction.

A long thin rod of the sandstone may be twisted, elongated, compressed longitudinally, or bent nearly equally in any direction. When suspended by its extremities, the rod takes the form of a curve which very nearly approaches a true catenary. My friend and colleague, Prof. E. W. Morgan, of the Lehigh University, is, at my request, studying the exact nature of the curve thus formed.

The specimens examined are from two localities; from Mines Geraes in Brazil, a specimen in the collection of the Smithsonian Institution; and another from Stokes Co., N. C. An analysis of the latter showed a large proportion of silicic acid, and the cement, if it be one, which unites the grains of sand, is not ferruginous, as was shown by boiling a thin section, during a considerable period, with hydrochloric acid.

I would be very much obliged to you (or to any member of the Academy,) if you would furnish me with specimens of Itacolumite from different localities for this investigation.

I have thought that the establishment of the curious molecular character of this mineral might lead to a knowledge of the physical conditions by which it was effected and perhaps throw light upon that vexed question, the origin of the diamond.

Very truly yours,

CHARLES M. WETHERILL.

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ERRATUM.

On page 12, omit from foot of column entitled *Spheno-parietal suture* the name *Troglodytes gorilla*, and insert it at the head of column entitled *Temporo-frontal suture*.